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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/546,622	08/22/2005	Tsugio Yokoo	4265-0063WOUS	4471
35301 7590 06/12/2008 MCCORMICK, PAULDING & HUBER LLP CITY PLACE II 185 ASYLUM STREET HARTFORD, CT 06103				
EXAMINER DESAL, NAISHADH N				
ART UNIT 2834		PAPER NUMBER		
MAIL DATE 06/12/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/546,622

Applicant(s)

YOKOO ET AL.

Examiner

NAISHADH N. DESAI

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 8/22/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I (claims 1-7) in the reply filed on 4/18/2008 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 8/22/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3,5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Gstöhl et al (US 5727307).

4. As per independent claim 1:

A shaft, on an outer circumferential surface of which knurls are (Fig 14,38) formed by first and second molds provided relatively movably in directions of being close to and separating from each other (the method of forming the device is not germane to the

issue of patentability of the device itself.) and to which a member to be fitted having a fit hole is fitted/fixed (Fig 14,37), comprising:

a pair of first knurls (Fig 14,38) formed by a pair of first molding edges, each having a cutting face formed in parallel to a relatively moving direction and an extrusion face formed at an acute angle with respect to said cutting face and provided in said first mold so as to oppose to said cutting face and be disposed at a predetermined interval (the method of forming the device is not germane to the issue of patentability of the device itself); and

a pair of second knurls (Fig 14,38) formed by a pair of second molding edges, each having a cutting face formed in parallel to a relatively moving direction and an extrusion face formed at an acute angle with respect to said cutting face and provided in said second mold so as to oppose to said cutting face and be disposed at a predetermined interval (the method of forming the device is not germane to the issue of patentability of the device itself),

wherein four strips of said knurls are formed so as to be evenly spaced circumferentially (Fig 14,38).

Regarding claim 1 above, "forming by molding", this limitation is a product-by process limitation. The method of forming the device is not germane to the issue of patentability of the device itself. This does not structurally distinguish the claim over the prior art. Therefore the method of forming / molding the device has not been given patentable weight.

5. As per dependent claim 3:

The shaft according to claim 1, wherein the pair of said first molding edges contact at an interval of circumferentially falling within a range of 90 degrees, the pair of said second molding edges contact at an interval of circumferentially falling within a range of 90 degrees, and thereby the four strips of said knurls are formed so as to be evenly spaced circumferentially (Fig 14,38).

Regarding claim 3 above, "forming by molding", this limitation is a product-by process limitation. The method of forming the device is not germane to the issue of patentability of the device itself. This does not structurally distinguish the claim over the prior art. Therefore the method of forming the device has not been given patentable weight.

6. As per dependent claim 5:

The shaft according to claim 1 wherein an inner diameter of said fit hole is set larger than an outer diameter of said shaft, and said member to be fitted is fitted/fixed to said first and second knurls (Fig 14,37 and 38 and 1).

7. As per dependent claim 6:

The shaft according to claim 1, further comprising:

a pair of third knurls circumferentially displaced by 45 degrees from said first knurls (Fig 14,38) and formed by said first molding edges; and

a pair of fourth knurls circumferentially displaced by 45 degrees from said second knurls (Fig 14,38) and formed by said second molding edges,

wherein eight strips of said knurls are formed so as to be evenly spaced circumferentially (Fig 14,38).

Regarding claim 6 above, "forming by molding", this limitation is a product-by process limitation. The method of forming the device is not germane to the issue of patentability of the device itself. This does not structurally distinguish the claim over the prior art. Therefore the method of forming the device has not been given patentable weight.

8. As per dependent claim 7:

The shaft according to claim 1, wherein said member to be fitted is a commutator used for an electric motor (Fig 14, 25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gstöhl et al (US 5727307).

9. As per dependent claim 4:

The shaft according to claim 1, wherein axial-directional lengthwise dimensions of said first and second knurls are set longer than that of said member to be fitted.

Regarding claim 4 above, Gstöhl et al discloses the claimed invention except for the shape or size of the knurls to set longer than that of said member to be fitted. It would have been an obvious matter of design choice to shape or size of the knurls to set longer than that of said member to be fitted, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955)

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gstöhl et al (US 5727307) in view of Dunn (US 2708246).

10. As per dependent claim 2:

The shaft according to claim 1, wherein vertexes of said knurls are evenly spaced circumferentially.

Gstöhl et al teaches the device as claimed above. Gstöhl et al also teaches for the knurls to be evenly spaced circumferentially. Gstöhl et al do not teach the knurls to have vertexes evenly spaced circumferentially. Dunn teaches the use of knurls shaped in the form of vertexes (Figs 1 and 2). Dunn also teaches varying the depth of the knurls by

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varying the angle of the peaks (Col 2 ll 7-9). It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Gstöhl et al to use knurls having vertexes as disclosed by Dunn. The motivation to do so would be that it would help secure the shaft in relation to the chosen element (Col 1 ll 15-16 of Dunn).

Gstöhl et al discloses the claimed invention except for the shape or size of the knurls to have vertexes. It would have been an obvious matter of design choice to shape or size of the knurls to have vertexes, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for details.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAISHADH N. DESAI whose telephone number is (571)270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Naishadh N Desai

Patent Examiner

/Darren Schuberg/

Supervisory Patent Examiner, Art Unit 2834